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(11)

EP 0 869 690 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
07.10.1998 Bulletin 1998/41

(51) Int Cl. 6: **H04Q 7/22, H04M 3/50**

(21) Application number: **98302198.1**

(22) Date of filing: **24.03.1998**

(84) Designated Contracting States:
**AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC
NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **03.04.1997 US 832086**

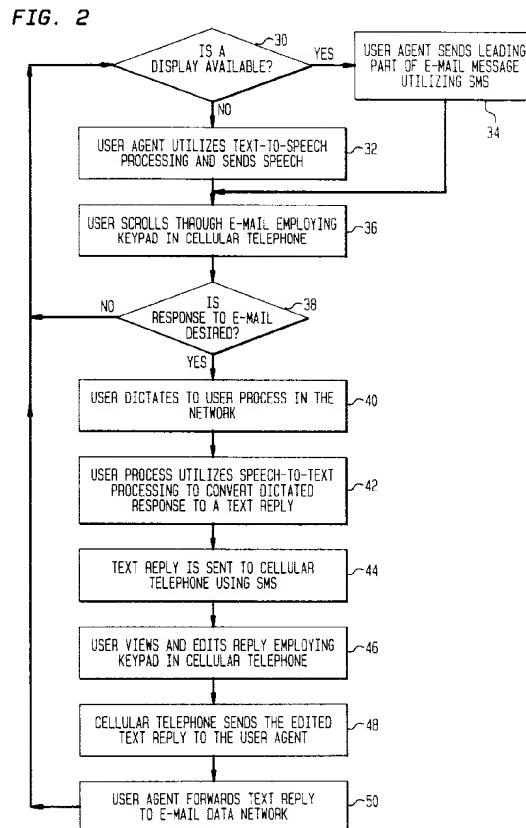
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(54) E-mail access from wireless telephones using user agents

(57) A method of accessing a text file comprised of individual messages from a cellular telephone comprises the steps of: accessing the text file; selecting one of the individual messages from the text file; formatting the selected message with a network resident user agent; sending the formatted message to the cellular telephone.



Description**Field Of The Invention**

This invention relates generally to wireless communications, and more particularly to e-mail access from a cellular/PCS phone.

Background Of The Invention

Advances in technology have enabled high speed wireless communication and spurred the growth of wireless, and now mobile computing systems. Wireless communication for electronic equipment is frequently desirable for data transfer and monitoring.

Personal Communication Services (PCS) are a broad range of individualized telecommunication services which enable individuals or devices to communicate irrespective of where they are. Personal Communication Networks (PCN) are a new type of wireless telephone system communicating via low-power antennas. PCNs offer a digital wireless alternative to the traditional wired line.

E-mail was one of the first services developed on the Internet. Today, e-mail is an important service on any computer network, not just the Internet. E-mail involves sending a message from one computer account to another computer account. E-mail is used to send textual information as well as files, including graphic files, executable file, word processing and other files. E-mail is becoming a popular way to conduct business over long distances. Using e-mail to contact a business associate can be faster than using a voice telephone, because the recipient can read it at a convenient time, and the sender can include as much information as needed to explain the situation.

Currently, a user of a personal communication device utilizes a communicator with a full range of features and components, including many that may not be needed or desired. This results in a collection of devices, a mobile telephone for conversations, a module computing device for e-mail access, a mobile fax, and other devices.

Therefore, there is a need for accessing e-mail directly from a cellular telephone.

Summary Of The Invention

In accordance with the present invention, there is provided a method of accessing a text file comprised of individual messages from a cellular telephone. The method comprises the steps of: accessing the text file; selecting one of the individual messages from the text file; formatting the selected message with a network resident user agent; sending the formatted message to the cellular telephone.

Brief Description Of The Drawings

A more complete understanding of the present invention may be obtained from consideration of the following description in conjunction with the drawings in which:

FIG. 1 is an illustrative block diagram a communication system utilizing the present invention; and

FIG. 2 is a block diagram of e-mail access from a cellular telephone.

Detailed Description Of Various Illustrative Embodiments

Although the present invention is particularly well suited for use with a Mobile Telephone Cellular Systems and shall be described with respect to this application, the methods and apparatus disclosed here can be applied to other cellular systems including PCS.

Referring now to FIG. 1 there is shown a block diagram of a wireless network. A Mobile Telephone Switching Office (MTSO) 10 contains the field monitoring and relay stations for switching calls between the cellular network and the switched wired network 12. The MTSO controls the entire operation of a cellular system, monitoring all cellular calls, and tracking the location of all cellular-equipped vehicles traveling in the system, arranging hand-offs, and providing billing information. The MTSO is connected to a plurality of base stations 14. The base station 14 is the fixed transceiver in the wireless network, which is coupled through a radio port to a cellular antenna 16. The geographical area for which a base station 14 acts as the gateway is called its cell 18, the various base station 18 nodes are distributed at suitable locations. A mobile unit 20 communicates with a base station 14 within a cell 18. The mobile unit 20 contains an alphanumeric display 22. Cellular systems utilize Short Message Service (SMS) to send or receive short alphanumeric messages to or from mobile units 20. The switched wired network 12 can access an e-mail data network 24. The e-mail data network 24 may be coupled to the Internet or a stand alone network.

FIG. 2 is a flow chart of the present invention, a method for e-mail access from cellular telephones. In step 30 it is determined if a display is available for use on the cellular telephone. If a display is available, a message is displayed, by a network resident user agent sending the leading part of the e-mail message utilizing SMS in step 32. If a display is not available, or the user has selected a verbal interface, in step 34 the user agent utilizes text-to-speech processing and sends speech.

In simple terms, a user agent is a representative or a proxy of an end device inside the network. Agents are programs or a set of cooperating programs providing autonomous, high-level services for a user. Each end device has its own associated user agent. The two coop-

erate to facilitate message delivery functions. A user agent helps overcome air interface and end device constraints, and enhances personalizability of services provided to a subscriber.

After receiving the SMS data or verbal message, in step 36 the user scrolls through their e-mail employing the keypad in cellular telephone. In step 38 it is determined if a response to the e-mail message is desired. If a response is desired, in step 40, the user dictates to a user process in the network. The user process utilizes speech-to-text processing to convert the dictated response to a text reply in step 42. The text reply is sent to cellular telephone using SMS in step 44. A user views and optionally edits the reply in step 46, employing the keypad in cellular telephone. In step 48, the cellular telephone sends the edited text reply to the user agent. The user agent forwards the text reply with proper formatting in step 50 to the e-mail data network 24.

Optionally the mobile unit 20 provides automatic notification of the presence of unread e-mail. The notification can be active, wherein the mobile unit 20 is contacted when there is unread e-mail for a user. The notification can be periodic, such as every 10 minutes, etc. where unread e-mail is grouped before the user is contacted. E-mail can have a priority associated with it. This priority can be utilized to determine the type of notification that is made, i.e. when a message is flagged as urgent, immediate notification can occur. The time delay, handling of messages based upon priority, and the enabling/disabling of unread e-mail notification can all be set by the user from their mobile unit 20.

In an additional enhancement, the system can notify the user of unread e-mail utilizing the sender of the message as a criteria, wherein the sender is compared to a user maintained list of important e-mail senders.

Numerous modifications and alternative embodiments of the invention will be apparent to those skilled in the art in view of the foregoing description. Accordingly, this description is to be construed as illustrative only and is for the purpose of teaching those skilled in the art the best mode of carrying out the invention.

Claims

1. A method of accessing a text file comprised of individual messages from a wireless telephone, said method comprising the steps of:

accessing the text file;

selecting one of the individual messages from the text file;

formatting said selected message, in a predetermined manner, with a network resident user agent;

sending said formatted message to the wireless telephone.

2. The method as recited in claim 1 wherein the step of formatting comprises formatting said selected message utilizing a text to speech conversion method.
3. The method as recited in claim 1 wherein the step of formatting comprises formatting said selected message in a short-message-service format for display on the cellular telephone.
4. The method as recited in claim 1 further comprising the step of notifying the wireless telephone automatically upon the presence of an unread message.
5. The method as recited in claim 4 wherein the step of notifying is delayed for a predetermined time interval.
6. The method as recited in claim 4 wherein the step of notifying is conditioned upon a priority of said unread message.
7. The method as recited in claim 4 wherein the step of notifying is conditioned upon the identity of the sender of said unread message.
8. The method as recited in claim 1 comprising the additional step of replying to said selected message.
9. The method as recited in claim 8 wherein the step of replying comprises:
 - 35 dictating a response;
 - formatting said response with said resident user agent; and,
 - 40 review said formatted response.
10. The method as recited in claim 9 wherein the step of formatting said response comprises formatting said response utilizing a speech to text conversion method.
11. The method as recited in claim 9 wherein the step of formatting said response comprises formatting said response in a short message service format for display on the cellular telephone.
12. The method as recited in claim 9 further comprising the additional step of forwarding said response with a network resident agent.
13. A method as claimed in any of the preceding claims wherein said file is an e-mail file and said telephone

is a cellular telephone.

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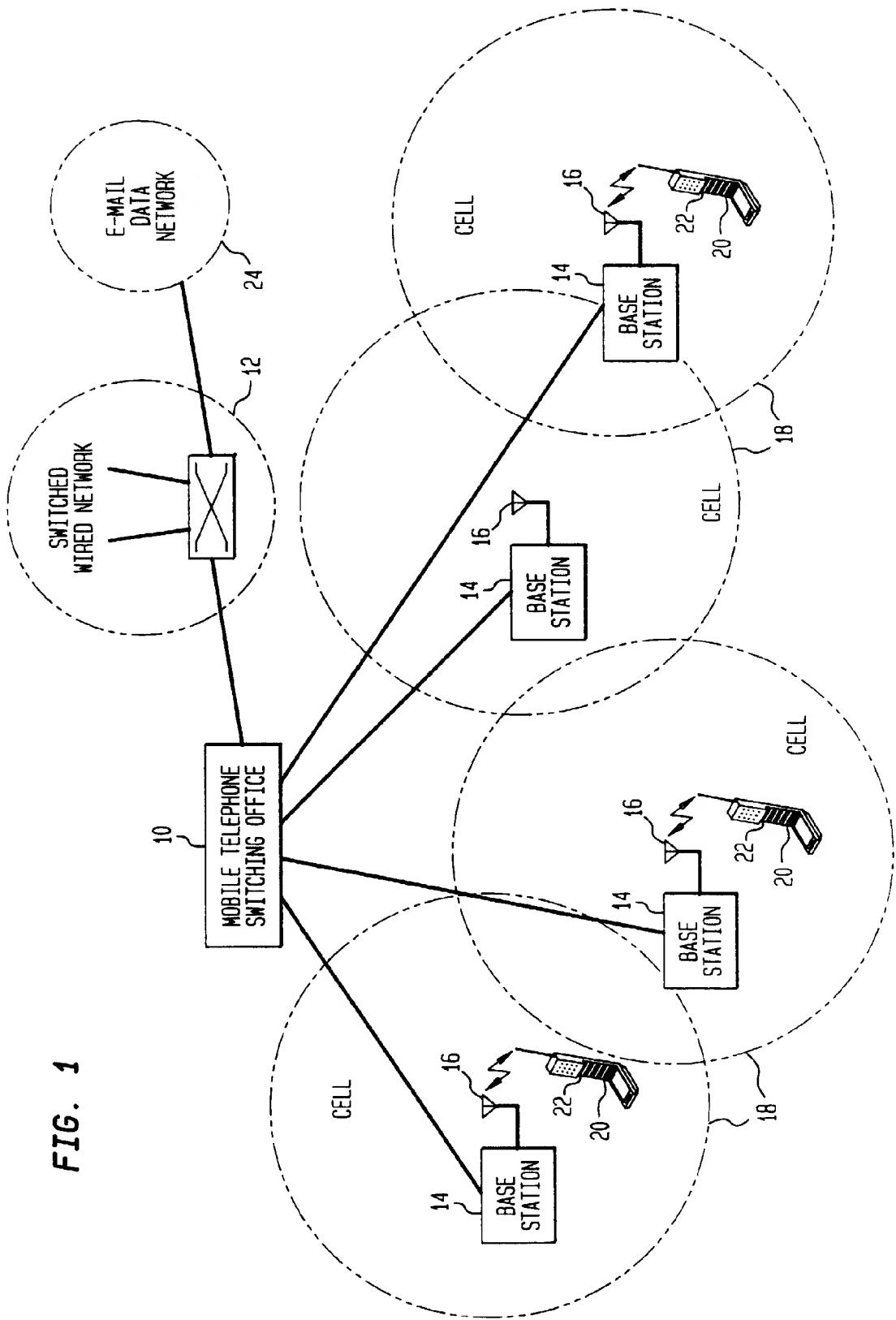
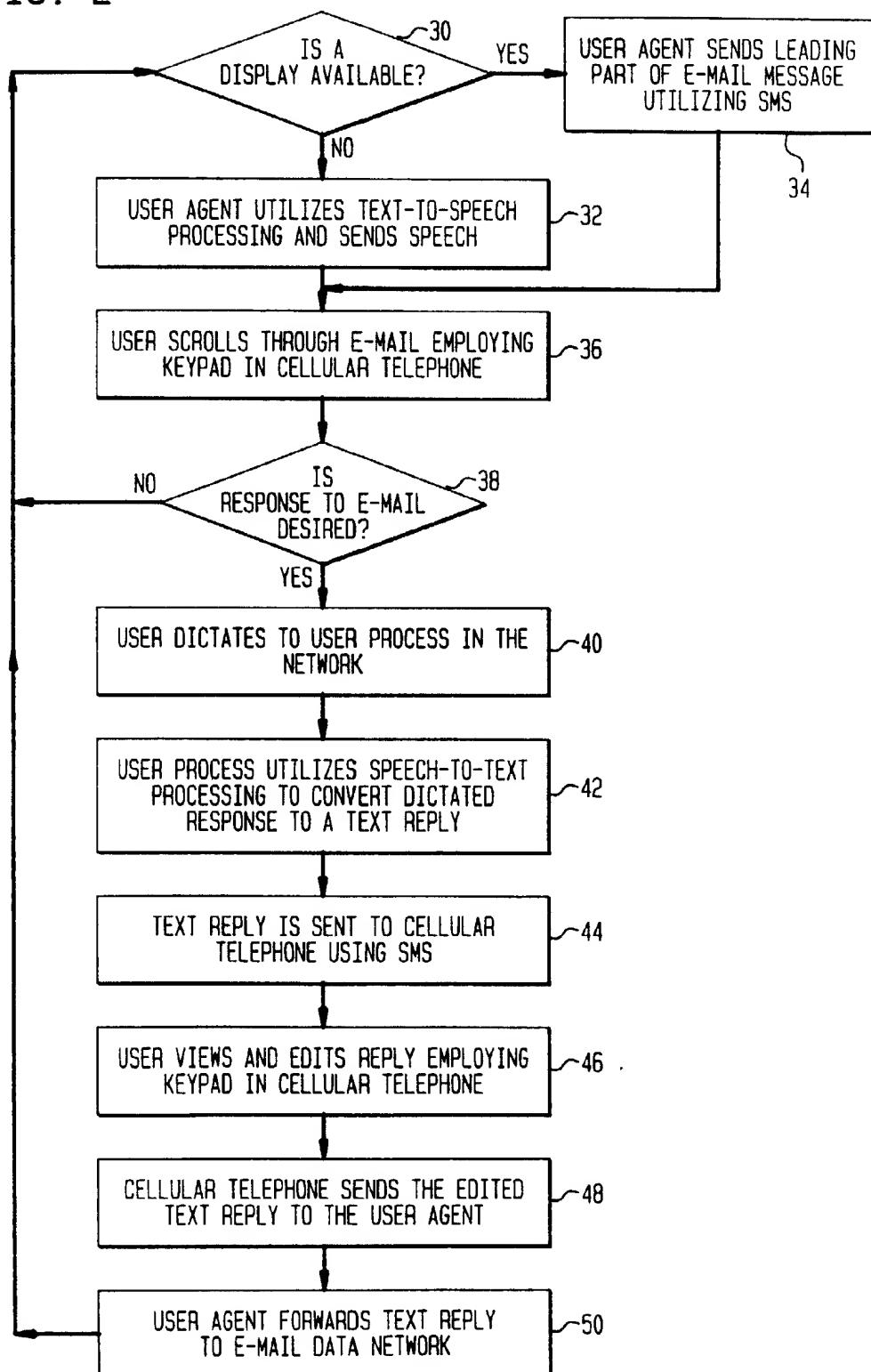
FIG. 1

FIG. 2



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EP 0 869 690 A3

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EUROPEAN PATENT APPLICATION

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25.08.1999 Bulletin 1999/34

(51) Int Cl. 6: **H04Q 7/22, H04M 3/50**

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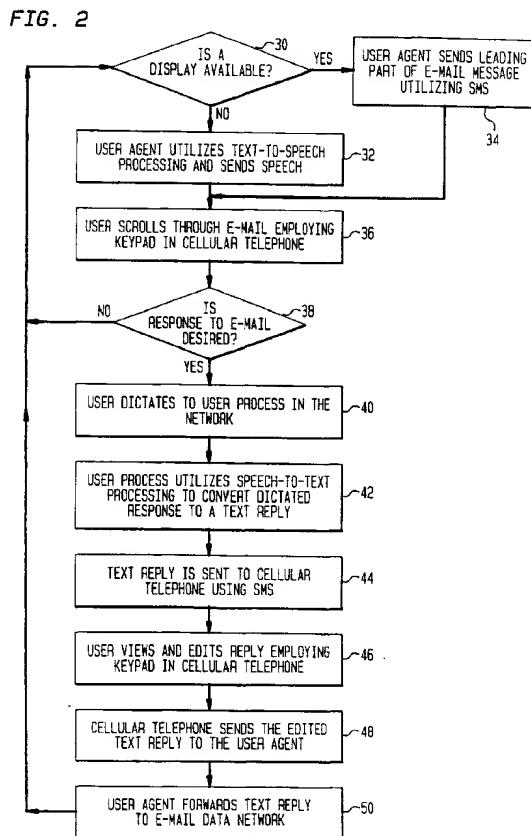
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EUROPEAN SEARCH REPORT

Application Number

EP 98 30 2198

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
Y	WO 97 08906 A (SENDIT AB ;WINBLADH HJALMAR (SE)) 6 March 1997 * page 2, line 27 – page 4, line 5 * * page 12, line 34 – page 13, line 15 * ---	1,3,4, 7-9,12, 13	H04Q7/22 H04M3/50
Y	HOSHI T ET AL: "A MOBILE PEN-BASED COMPUTING SYSTEM FOR CELLULAR TELEPHONE NETWORKS" PROCEEDINGS OF THE GLOBAL TELECOMMUNICATIONS CONFERENCE (GLOBECOM), HOUSTON, NOV. 29 - DEC. 2, 1993, vol. 1, 29 November 1993, pages 380-384, XP000428085 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS * page 381, paragraph 2.4 * * page 383, paragraph 4.4.1 * * page 383, paragraph 4.4.2 * ----	1,3,4, 7-9,12, 13	
A	DE 43 40 679 A (DETECON GMBH) 1 June 1995 * column 1, line 1 – line 65 * -----	1,2,10	<div style="display: flex; justify-content: space-between;"> <div>TECHNICAL FIELDS SEARCHED (Int.Cl.6)</div> <div>H04Q</div> </div>
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	6 July 1999	Dionisi, M	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone	T : theory or principle underlying the invention		
Y : particularly relevant if combined with another document of the same category	E : earlier patent document, but published on, or after the filing date		
A : technological background	D : document cited in the application		
O : non-written disclosure	L : document cited for other reasons		
P : intermediate document	& : member of the same patent family, corresponding document		

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
 The members are as contained in the European Patent Office EDP file on
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06-07-1999

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